


IN THE CLAIMS:

1. (Currently Amended) A method for operating a data communication system, comprising ~~steps of~~:

originating an electronic commerce transaction at a first party;

transmitting the electronic commerce transaction through the data communications network towards a second party;

 ~~during the step of transmitting,~~ inputting the electronic commerce transaction to an electronic commerce transaction filter that is interposed between two network components at a location where electronic commerce transaction related messages and message data are cast in a known form for enabling the electronic commerce transaction filter to interpret at least one characteristic of the electronic commerce transaction in a manner that is independent of a particular electronic commerce program that originated the electronic commerce related messages and message data; and

in response to interpreting the at least one characteristic of the electronic commerce transaction, operating the electronic commerce transaction filter to take some action with respect to the electronic commerce transaction.

2. (Original) A method as in claim 1, wherein the action taken with respect to the electronic commerce transaction is an analysis of the electronic commerce transaction for the purpose of collecting information across an administrative domain.

3. (Original) A method as in claim 1, wherein the action taken with respect to the electronic commerce transaction is an analysis of the electronic commerce transaction for the purpose of enforcing a policy for an administrative domain.

4. (Original) A method as in claim 1, wherein the action taken with respect to the electronic commerce transaction is a modification of the electronic commerce transaction.

5. (Original) A method as in claim 1, wherein the action taken with respect to the electronic commerce transaction is a redirection of the electronic commerce transaction to a third party.

6. (Original) A method as in claim 1, wherein the action taken with respect to the electronic commerce transaction is an extraction of information from the e-commerce transaction for recording the information for statistical or other purposes.

7. (Original) A method as in claim 1, wherein the action taken with respect to the electronic commerce transaction is a verification of the authenticity of the electronic commerce transaction.

8. (Original) A method as in claim 1, wherein the action taken with respect to the electronic commerce transaction is a verification of the authenticity of a component part of the electronic commerce transaction.

9. (Original) A method as in claim 1, wherein the action taken with respect to the electronic commerce transaction is a verification that the electronic commerce transaction is in compliance with a regulation.

10. (Original) A method as in claim 1, wherein the action taken with respect to the electronic commerce transaction is a verification that the electronic commerce transaction is in compliance with a standard.

11. (Original) A method as in claim 1, wherein the action taken with respect to the electronic commerce transaction is a termination of the electronic commerce transaction.

12. (Original) A method as in claim 1, wherein the action taken with respect to the electronic commerce transaction is a delay of the electronic commerce transaction.

13. (Original) A method as in claim 1, wherein the action taken with respect to the electronic commerce transaction is an encryption of all or a part of the electronic commerce transaction, and sending the encrypted electronic commerce transaction to another destination.

14. (Original) A method as in claim 1, wherein the action taken with respect to the electronic commerce transaction is generating an alert if an analysis performed by the electronic commerce transaction filter indicates that a certain filtering criterion is met.

15. (Original) A method as in claim 1, wherein the action taken with respect to the electronic commerce transaction is passing the electronic commerce transaction through the electronic commerce transaction filter without modification and without recording any information regarding the electronic commerce transaction.

Q12 16. (Original) A method as in claim 1, wherein the action taken with respect to the electronic commerce transaction is selected at least in part by applying predefined rules to the contents of one or more messages that comprise the electronic commerce transaction.

17. (Original) A method as in claim 1, wherein the action taken with respect to the electronic commerce transaction is selected at least in part by applying predefined rules that are independent of the contents of one or more messages that comprise the electronic commerce transaction.

18. (Original) A method as in claim 1, wherein the action taken with respect to the electronic commerce transaction is selected at least in part by applying predefined rules based on at least one of an origin or a destination of the electronic commerce transaction.

19. (Currently Amended) A method as in claim 1, wherein the action taken with respect

to the electronic commerce transaction is recording at least one predetermined type of information, and further comprising ~~steps of~~ accumulating recorded information from a plurality of electronic commerce transactions, and making the accumulated recorded information available to interested parties.

20. (Currently Amended) A method as in claim 1, wherein the action taken with respect to the electronic commerce transaction is recording at least one predetermined type of information, and further comprising ~~steps of~~ accumulating recorded information from a plurality of electronic commerce transactions, and deriving a filtering criterion from the accumulated recorded information for use in the same or in another electronic commerce transaction filter.

21. (Currently Amended) A method as in claim 1, wherein ~~the step of~~ operating the electronic commerce transaction filter is performed in parallel in a plurality of electronic commerce transaction filters that are disposed between two layers of an administrative domain hierarchy.

22. (Currently Amended) A method as in claim 1, wherein ~~the step of~~ operating the electronic commerce transaction filter comprises ~~an initial step of~~ decrypting all or part of the electronic commerce transaction.

23. (Currently Amended) A method as in claim 1, wherein the action taken with respect to the electronic commerce transaction is an encryption of all or a part of the electronic commerce transaction using at least one cryptographic key, and further comprising ~~a step of~~ sending the at least one cryptographic key to another location.

24. (Original) A method as in claim 1, wherein the action taken with respect to the electronic commerce transaction is a verification that the electronic commerce transaction is in compliance with a predetermined policy.

25. (Original) A method as in claim 1, wherein the action taken with respect to the

electronic commerce transaction is determining whether the electronic commerce transaction may be fraudulent.

26. (Currently Amended) A data communication system, comprising:

a first party for originating an electronic commerce transaction and for transmitting the electronic commerce transaction through a data communications network towards a second party; and

an electronic commerce transaction filter that is transparently interposed between two data communication network components at a location where electronic commerce transaction related messages and message data are cast in a known form for enabling the electronic commerce transaction filter to interpret at least one characteristic of the electronic commerce transaction in a manner that is independent of a particular electronic commerce program that originated the electronic commerce related messages and message data, said filter being responsive to interpreting the at least one characteristic of the electronic commerce transaction for operating on the electronic commerce transaction in accordance with at least one filter criterion for taking some action with respect to the electronic commerce transaction.


27. (Currently Amended) A method of conducting business over the Internet, wherein parties interact by originating an electronic commerce transaction at a first party and transmitting the electronic commerce transaction through the Internet to a second party, the method comprising steps of:

intercepting the electronic commerce transaction with an electronic commerce transaction filter that is interposed between two data communication network components at a location where electronic commerce transaction related messages and message data are cast in a known form for enabling the electronic commerce transaction filter to interpret at least one characteristic of the electronic commerce transaction in a manner that is

independent of a particular electronic commerce program that originated the electronic commerce related messages and message data; and

in response to interpreting the at least one characteristic of the electronic commerce transaction, operating the electronic commerce transaction filter in accordance with at least one filter criterion so as to record at least one predetermined type of information, and further comprising steps of accumulating recorded information from a plurality of electronic commerce transactions, and making the accumulated recorded information available to interested parties.

28. (Currently Amended) A method of conducting business over the Internet, wherein parties interact by originating an electronic commerce transaction at a first party and transmitting the electronic commerce transaction through the Internet to a second party, the method comprising ~~steps of:~~



intercepting the electronic commerce transaction with an electronic commerce transaction filter that is interposed between two data communication network components at a location where electronic commerce transaction related messages and message data are cast in a known form;

interpreting with the electronic commerce transaction filter at least one characteristic of the electronic commerce transaction in a manner that is independent of a particular electronic commerce program that originated the electronic commerce related messages and message data; and

in response to interpreting the at least one characteristic of the electronic commerce transaction, operating the electronic commerce transaction filter in accordance with at least one filter criterion to record at least one predetermined type of information, and further comprising steps of accumulating recorded information from a plurality of electronic commerce transactions, deriving a new or a modified filtering criterion from

the accumulated recorded information, and further comprising a step of offering the new or modified filtering criterion for use by another electronic commerce transaction filter.

29. (Currently Amended) A method of conducting business over the Internet, wherein parties interact by originating an electronic commerce transaction at a first party and transmitting the electronic commerce transaction through the Internet to a second party, where the electronic commerce transaction comprises ~~an acceptance of~~ at least an offer to provide goods or services based on stipulated terms; the method comprising ~~steps of~~:

intercepting ~~the~~ an electronic commerce transaction with an electronic commerce transaction filter that is interposed between two data communication network components;

redirecting the intercepted electronic commerce transaction to a third party; and

providing the third party the opportunity to provide the goods or services for the stipulated terms or for other terms related to the stipulated terms.

30. (Currently Amended) A method as in claim 29, wherein ~~the step of~~ providing enables the third party to provide the goods or services for a price that is either less than or greater than a price set by the stipulated terms.

31. (Currently Amended) A computer-readable medium comprising computer program instructions for directing a computer to execute a method ~~having steps of~~, in response to originating an electronic commerce transaction at a first party and transmitting the electronic commerce transaction through a data communications network towards a second party, inputting the electronic commerce transaction to an electronic commerce transaction filter that is transparently interposed between two network components at a location where electronic commerce transaction related messages and message data are cast in a known form; interpreting with the electronic commerce transaction filter at least one characteristic of the electronic

A2 commerce transaction in a manner that is independent of a particular electronic commerce program that originated the electronic commerce related messages and message data; and in response to interpreting the at least one characteristic of the electronic commerce transaction, operating the electronic commerce transaction filter to take some action with respect to the electronic commerce transaction in accordance with at least one filter criterion.

A3 32. (New) A computer-readable medium comprising computer program instructions for directing a computer to respond to a receipt of electronic commerce transaction related information that is originated at a first party for transmission through a data communications network towards an intended party, the computer being coupled between a first network component and a second network component at a location where the electronic commerce transaction related information exists in a known form; the computer program instructions causing the computer to interpret the electronic commerce transaction related information based on knowledge of the known form; and to take some action with respect to the electronic commerce transaction.

33. (New) A computer-readable medium as in claim 32, where the action taken with respect to the electronic commerce transaction is an analysis of the electronic commerce transaction for the purpose of collecting information across an administrative domain.

34. (New) A computer-readable medium as in claim 32, where the action taken with respect to the electronic commerce transaction is an analysis of the electronic commerce transaction for the purpose of enforcing a policy for an administrative domain.

35. (New) A computer-readable medium as in claim 32, where the action taken with respect to the electronic commerce transaction is a modification of the electronic commerce transaction.

36. (New) A computer-readable medium as in claim 32, where the action taken with respect to the electronic commerce transaction is transmitting the electronic commerce

transaction to another party in addition to, or in place of, the intended party.

37. (New) A computer-readable medium as in claim 32, where the action taken with respect to the electronic commerce transaction is an extraction of information from the e-commerce transaction related information for statistical or other purposes.

38. (New) A computer-readable medium as in claim 32, where the action taken with respect to the electronic commerce transaction is a verification of the authenticity of the electronic commerce transaction.

39. (New) A computer-readable medium as in claim 32, where the action taken with respect to the electronic commerce transaction is a verification of the authenticity of at least one component part of the electronic commerce transaction.

40. (New) A computer-readable medium as in claim 32, where the action taken with respect to the electronic commerce transaction is a verification that the electronic commerce transaction is in compliance with at least one of a regulation and a standard.

41. (New) A computer-readable medium as in claim 32, where the electronic commerce transaction related information comprises at least one message that comprises an electronic commerce transaction sub-transaction, and where the action taken is a reconstruction of a complete electronic commerce transaction from a plurality of electronic commerce transaction sub-transactions, at least some of which are stored in a persistent memory.

42. (New) A computer-readable medium as in claim 32, where the action taken with respect to the electronic commerce transaction is at least one of termination of the electronic commerce transaction, and delay of the electronic commerce transaction.

43. (New) A computer-readable medium as in claim 32, where the action taken with respect to the electronic commerce transaction is at least one of encrypting all or a part of the

electronic commerce transaction related information, and decrypting all or a part of the electronic commerce transaction related information.

44. (New) A computer-readable medium as in claim 43, where execution of the computer program instructions implements an electronic commerce filter function that is disposed between a pair of cryptographic proxy functions.

45. (New) A computer-readable medium as in claim 32, where the action taken with respect to the electronic commerce transaction is generating an alert if analysis indicates that the electronic commerce transaction may be fraudulent.

46. (New) A computer-readable medium as in claim 32, wherein the action taken with respect to the electronic commerce transaction is passing, without modification, the electronic commerce transaction related information between the first network component and the second network component.

47. (New) A computer-readable medium as in claim 32, where the action taken with respect to the electronic commerce transaction is passing, without recording information regarding the electronic commerce transaction, the electronic commerce transaction related information between the first network component and the second network component.

48. (New) A computer-readable medium as in claim 32, where the action taken with respect to the electronic commerce transaction is selected at least in part by applying predefined rules to the contents of one or more messages that comprise the electronic commerce transaction related information.

49. (New) A computer-readable medium as in claim 32, where the action taken with respect to the electronic commerce transaction is recording at least one predetermined type of electronic commerce transaction related information, and further comprising accumulating recorded information from a plurality of electronic commerce transactions, and making the

accumulated recorded information available to interested parties.

50. (New) A computer-readable medium as in claim 32, where the action taken with respect to the electronic commerce transaction is recording at least one predetermined type of electronic commerce transaction related information, and further comprising accumulating recorded information from a plurality of electronic commerce transactions, and using the accumulated recorded information for at least one of deriving at least one criterion, or modifying at least one criterion, that is considered when taking an action with regard to an electronic commerce transaction.

51. (New) A computer-readable medium as in claim 32, where the computer program instructions direct one or more computers so as to operate simultaneously on a plurality of electronic commerce transactions within an administrative domain.

52. (New) A computer-readable medium as in claim 32, where the computer program instructions direct one or more computers so as to operate simultaneously on a plurality of electronic commerce transactions within an administrative domain for enforcing at least one administrative domain policy uniformly across the plurality of electronic commerce transactions.

53. (New) A computer-readable medium as in claim 32, where the action taken with respect to the electronic commerce transaction is a verification that the electronic commerce transaction is in compliance with a predetermined policy.

54. (New) A computer-readable medium as in claim 32, where the action to be taken with respect to a particular electronic commerce transaction is specified by contacting another computer software system, and receiving a reply from the other computer software system.

55. (New) A computer-readable medium as in claim 32, where the computer program instructions that cause the computer to interpret the electronic commerce transaction related information do so in a manner that does not require knowledge of a particular electronic

commerce program that generated the electronic commerce transaction related information in the known form.

56. (New) A computer-readable medium as in claim 32, where the known form of the electronic commerce related information comprises data encoded according to a specification such that other programs capable of applying the specification to the known form of the electronic commerce transaction related information can meaningfully process the data.

57. (New) A computer-readable medium as in claim 32, where the known form of the electronic commerce related information comprises data produced by an e-commerce program in accordance with a predetermined specification, the known form of the electronic commerce transaction related information being a form that can be processed by another e-commerce program that supports the same predetermined specification.

58. (New) A computer-readable medium as in claim 32, where the known form of the electronic commerce transaction related information is a form that can be analyzed independent of a particular electronic commerce program from which the electronic commerce transaction related information originates.

59. (New) A computer-readable medium as in claim 58, where the action taken with respect to the electronic commerce transaction is an accumulation of at least some of the electronic commerce transaction related information based on knowledge of the known form of the electronic commerce transaction related information for enabling a combination of electronic commerce transaction related information that originates from different electronic commerce programs.

60. (New) A computer-readable medium as in claim 58, where the action taken with respect to the electronic commerce transaction is an enforcement of a policy at the electronic commerce transaction level, where the enforcement of the policy is based on knowledge of the known form of the electronic commerce transaction related information for enabling the policy

to be enforced for electronic commerce transactions that originate from different electronic commerce programs.

61. (New) A computer-readable medium as in claim 32, where the computer program instructions that cause the computer to interpret the electronic commerce transaction related information are further operable for distinguishing electronic commerce transaction traffic from other traffic passing between the parties based on knowledge of the known form of the electronic commerce transaction related information.

Q3 62. (New) A computer-readable medium comprising computer program instructions for directing at least one computer to respond to a receipt of electronic commerce transaction related information that was originated at a first party and transmitted through a data communications network towards an intended party, the computer being coupled between a first network component and a second network component at a location where the electronic commerce transaction related information exists in a known form; the computer program instructions causing the computer to interpret the electronic commerce transaction related information based on knowledge of the known form; and in response to interpreting the electronic commerce transaction related information, performing at least one of modifying the electronic commerce transaction related information before passing it towards the intended party, blocking the electronic commerce transaction related information so that it does not reach the intended party, and passing the electronic commerce transaction related information, with or without modification, to a party other than the intended party.

63. (New) A computer-readable medium as in claim 62, where the computer program instructions that cause the computer to interpret the electronic commerce transaction related information do so in a manner that does not require knowledge of a particular electronic commerce program that generated the electronic commerce transaction related information in the known form.

64. (New) A computer-readable medium as in claim 62, where the known form of the

electronic commerce related information comprises data encoded according to a specification such that other programs capable of applying the specification to the known form of the electronic commerce transaction related information can meaningfully process the data.

65. (New) A computer-readable medium as in claim 62, where the known form of the electronic commerce related information comprises data produced by an e-commerce program in accordance with a predetermined specification, the known form of the electronic commerce transaction related information being a form that can be processed by another e-commerce program that supports the same predetermined specification.

66. (New) A computer-readable medium as in claim 62, where the known form of the electronic commerce transaction related information is a form that can be analyzed independent of a particular electronic commerce program from which the electronic commerce transaction related information originates.

a³ 67. (New) A computer-readable medium as in claim 66, where the action taken with respect to the electronic commerce transaction is an accumulation of at least some of the electronic commerce transaction related information based on knowledge of the known form of the electronic commerce transaction related information for enabling a combination of electronic commerce transaction related information that originates from different electronic commerce programs.

68. (New) A computer-readable medium as in claim 66, where the action taken with respect to the electronic commerce transaction is an enforcement of a policy at the electronic commerce transaction level, where the enforcement of the policy is based on knowledge of the known form of the electronic commerce transaction related information for enabling the policy to be enforced for electronic commerce transactions that originate from different electronic commerce programs.

69. (New) A computer-readable medium as in claim 62, where the computer program

instructions that cause the computer to interpret the electronic commerce transaction related information are further operable for distinguishing electronic commerce transaction traffic from other traffic passing between the parties based on knowledge of the known form of the electronic commerce transaction related information.

Q3 70. (New) A system that operates to provide a service over a data communications network to a first entity having at least one electronic commerce transaction filter disposed within a first data processing system associated with the first entity for monitoring electronic commerce transactions, said at least one electronic commerce transaction filter being disposed at a location where electronic commerce transaction related messages and message data are cast in a known form and operating to interpret, based at least on a content of a filter criteria module, at least one characteristic of electronic commerce transactions in a manner that is independent of a particular electronic commerce program that originated the electronic commerce related messages and message data; further comprising a second data processing system associated with a service provider second entity, said second data processing system being coupled to said at least one electronic commerce transaction filter over the data communications network for at least one of receiving information from and sending information to the electronic commerce transaction filter.

71. (New) A system as in claim 70, where said information comprises security-related information.

72. (New) A system as in claim 70, where said information enables said service provider second entity to collect a record of electronic commerce transactions.

73. (New) A system as in claim 70, where said information is received by said service provider second entity in an encrypted form.

74. (New) A system as in claim 70, where said information is received by said service provider second entity, is time stamped, and is archived.

75. (New) A system as in claim 70, where said information is received by said service provider second entity in an encrypted form using a public key of a public/private key pair chosen by the first entity, and is archived by said service provider second entity.

76. (New) A system as in claim 70, where information that is sent from said service provider second entity comprises heuristics for use by said criteria module in detecting fraudulent electronic commerce transactions.

77. (New) A system as in claim 70, where information that is sent from said service provider second entity is sent in accordance with a subscription service and comprises up-to-date information relating to regulations.

78. (New) A system as in claim 70, where information that is sent from said service provider second entity is sent in accordance with a subscription service and provides at least one security check prior to completing an electronic commerce transaction.

79. (New) A system as in claim 70, where information that is received by said service provider second entity is used to audit at least one policy used by the at least one electronic commerce transaction filter in order to certify the at least one policy is in agreement with at least one relevant criterion.

80. (New) A system as in claim 70, where information received by said service provider second entity enables said second entity to re-direct a purchase order for at least one of goods or services to the second entity.
